

ABSTRACT OF THE DISCLOSURE

A system for composing high-density arrays of biological and chemical materials onto target substrates by a rapid sequence. A system includes a thin liquid transfer plate having a fill side, a dispense side and a plurality of channels extending therethrough. The channels of the liquid transfer plate may be loaded with chemical and or biological materials. Once loaded, the materials are ejected from the liquid transfer plate onto a plurality of target substrates. The system further includes various arm assemblies to manipulate and position the liquid transfer plate and the target plates. Additional liquid transfer plates may be loaded and dispensed onto the plurality of target substrates. Methods for composing a high-density array are also provided.